User Evaluation: PA Catheter Waveforms Troubleshooting System

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This paper reports on a user satisfaction survey of a system for consultation and education in troubleshooting pulmonary artery catheter waveforms. The twelve-item End-User Computing Satisfaction Questionnaire was used to assess users' ratings in four areas. On a scale of 1-5 (with 1 the lowest), the ratings were: Content, 3.5; Accuracy, 4.5; Format, 4.2; Ease of Use, 4.4, and Timeliness, 4.1. Comparison with ratings in a survey that included a variety of applications and settings is provided.

INTRODUCTION

The object of this evaluation is a microcomputer-based system for providing access to synthesized knowledge regarding characteristics, causes and management of PA catheter waveforms. Designed for physicians and nurses who practice in intensive care settings, the system contains content on approximately forty commonly and uncommonly encountered PA waveforms. Graphics and images are used extensively to explicate the knowledge [1].

METHODS/RESULTS

After ten months of use on a 19-bed cardiac intensive care unit, users of the system were surveyed to assess their satisfaction with the system. The instrument used was a short survey developed by Doll and Torkzadeh [2]. This twelve-item instrument uses a Likert-type scale to assess users' perceptions of five system components: Content, Accuracy, Format, Ease of Use, and Timeliness.

The questionnaire was distributed to users who met the following criteria: they used the system more than one time, they used it for a total of at least 8 minutes, and they viewed at least 20 screens. Of the 58 people who had logged onto the system during the experimental period, 30 users (52%) met the criteria.

Twenty-five out of thirty subjects returned the questionnaire, a response rate of 76%. On a scale of 1-5, the mean scores for the five dimensions of user satisfaction were: Content, 3.5; Accuracy, 4.5; Format, 4.2; Ease of Use, 4.4, and Timeliness, 4.1. The non-parametric Sign Test was used to see whether there was a significant number of mean ratings of 4 or more on each of the five components. Content is the only dimension that failed the test.

The average total score for the End User Satisfaction survey was 48.3, with a standard deviation of 8.56. This is very similar to the population statistics reported by Doll & Torkzadeh, where the average total score for a range of applications in several types of industries was 49.09, and the standard deviation was 8.30. The average total score of 48.3 for the PA Waveform Troubleshooting System falls in approximately the 40th percentile of total scores for all applications surveyed in the Doll & Torkzadeh study.

Although the experiment itself has been completed, the system is still in use on the experimental unit, and its use has expanded to other units within the hospital where knowledge of PA catheter waveforms is necessary in patient care.

References

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[2] Doll WJ, and Torkzadeh G. The Measurement of End-User Computing Satisfaction. MIS Quarterly, 1988, 12:259-274.

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